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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,952	07/24/2001	Duck Chul Hwang	1567.1015/MDS/JGM	3638

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EXAMINER

WEINER, LAURA S

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/910,952

Applicant(s)

HWANG ET AL.

Examiner

Laura S Weiner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 2 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 14 are rejected because "sulforane" should instead be "sulfolane".

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9, 11-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Simon et al. (5,626,981).

Simon et al. teaches in the abstract an electrochemical cell comprising an anode, positive electrode and an electrolyte comprising a lithium salt and a mixture of at least two aprotic organic solvents of which the first solvent has a high dielectric constant and the second solvent has a low viscosity. The electrolyte further contains a soluble compound of the same type as at least one of

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the solvents and contains at least one unsaturated bond and which can be reduced at the anode at potential of more than 1 volt with respect to lithium to form a passivation layer. Simon et al. teaches in column 3, line 60 to column 4, line 65, Examples 1-2, a cell comprising an electrolyte containing a mixture of solvents and 1M lithium salt ($\text{LiN}(\text{CF}_3\text{SO}_2)_2$) composed of one part by weight of propylene carbonate, one part by weight of ethylene carbonate and two parts by weight of dimethyl carbonate. Then 5 % by weight of vinylene carbonate was added relative to the weight of the mixture of solvents and in Examples 3-4, one part by weight of ethylene carbonate and one part of weight of DMC was used and then 5% by weight of VC was added relative to the weight of the mixture of solvents.

4. Claims 1-3, 9-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Skotheim et al. (5,961,672).

Skotheim et al. teaches in columns 11-12, Example 4, a battery comprising a cathode comprising sulfur and a carbon conductive material, a lithium anode and an electrolyte consisting of 50% 1,3-dioxolane, 20% diglyme, 10% sulfolane, 20% dimethoxyethane by volume and 1.0 M/L lithium triflate salt.

5. Claims 1-3, 8, 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Dahn et al. (5,041,347).

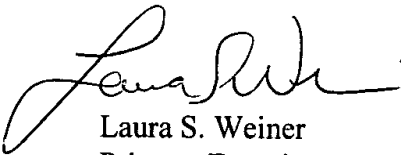
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Dahn et al. teaches in column 10, lines 30-44, that solvent systems employed in conventional lithium-based cells with molybdenum and sulfur-containing cathode materials have included propylene carbonate and ethylene carbonate and mixtures of these such as 2-methyltetrahydrofuran with propylene carbonate, ethylene carbonate or with both of PC and EC are particularly useful solvent systems.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Weiner whose telephone number is (703) 308-4396. The examiner works a flexible schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (703) 308-2383. The fax phone number for non-after finals is 703-872-9310 and the fax phone number for after-finals is 703-872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Laura S. Weiner
Primary Examiner
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June 9, 2003